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Preliminary TEM and NanoSIMS analysis of an anhydrous lithic clast from the CB/CH-like carbonaceous chondrite Isheyev

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Fine grained material in the lithic clasts of the CB/CH-like meteorite Isheyev is highly enriched in ^{15}N . No direct in situ correlation between highly ^{15}N enriched hotspots (up to $\sim +4000\%$) [1] and distinct mineral phases could be ascertained so far.

Here we report on a new attempt to combine TEM and NanoSIMS techniques to identify primary and secondary carrier phases of the $\delta^{15}\text{N}$ isotope anomaly. NanoSIMS N-isotope mappings were performed on two FIB sections of an Isheyev anhydrous lithic clast. Hot spots of high ^{15}N enrichments ($3956 \pm 193 \%$ and $3058 \pm 114 \%$) have been measured in one FIB section. A second FIB section of the same clast shows a more homogeneous distribution of the ^{15}N enrichments.

The hotspot regions will be studied in detail applying TEM techniques (EELS, EFTEM, SAED, EDX, HRTEM) to identify the mineral phase that carries the primary ^{15}N anomaly.

[1] Bonal, L. et al. (2010) GCA 74, 6590-6609.

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